

PSYCHE.

SOME TRICHOPTERA, AND ALLIED INSECTS, FROM NEW-FOUNDLAND.

BY NATHAN BANKS, WASHINGTON, D. C.

IN July, 1906, Mr. Owen Bryant visited Newfoundland, and at Grand Lake collected a number of Neuropteroid insects, principally Trichoptera. Through the kindness of Mr. C. W. Johnson the catch was sent to me for examination. As there are several new species in the collection, one new genus, and other rare forms, I have brought them together in the following paper.

Most of the caddice-flies captured belong to two species, *Apatania stigmatella* and *Hydropsyche slossonæ*; the latter was recently described from New Hampshire, the former is a European species of northern distribution. Two other species, *Limnephilus mæstus* and *L. nebulosus*, were represented by many specimens; one is new, the other is recorded from several parts of Boreal America and Europe.

The other species were mostly in a few examples. There are a few other specimens in too poor a condition for identification. Besides the caddice-flies there are two may flies and one stone-fly, the latter a new species. Altogether there are twenty caddice-flies, and three other forms, eight of which are described as new species.

PHRYGANEIDÆ.

Neuronina postica Walk.

Four specimens of ordinary type.

Neuronina semifasciata Say.

One specimen; a northern species.

Neuronina concatenata Walk.

One specimen; also a northern species.

LIMNEPHILIDÆ.

Colpotaulius perpusillus Walk

One specimen; northern distribution.

Anabolia 4-notata n. sp.

Head reddish brown, darker on middle of the vertex, antennae reddish, basal joint scarcely darker; palpi pale, very slender, in male the last joint is nearly as long as distance from eye to eye, the second joint but little shorter; ocelli large, twice as near to eyes as to each other; a reddish transverse wart on each side of posterior margin, bearing long hairs; pronotum inconspicuous, bilobed, with long fulvous hairs, thorax black on sides, a broad, pale, median stripe; the abdomen brown; legs yellowish with black spines; hind legs long, the sub-apical spurs only about one-eighth the distance before tip. Wings uniform brown, sparsely clothed with black and yellow hairs, a triangular white mark on the thyridium, and one over the arculus, a distinct black dot in base of third apical cell, and in thyridial cell behind the thyridium is a smaller black dot. Membrane distinctly rugulose; discal cell very long, more than twice as long as its pedicel, first apical not its width on discal, and fifth no farther back, fourth as wide as second or third at base; lower fork of median disjointed at the posterior anastomosis, anal cell very long and slender, basal cross-vein plainly before forking of median. Hind wings grayish hyaline, darker toward tip, with a distinct black dot in base of third apical cell; discal cell very long, first and fifth apicals only a short distance back of anastomosis, fourth fully as wide as second at base.

Expanse 33 mm.

Grand Lake, Newfoundland (Owen Bryant).

Limnephilus (Goniotaulius) moestus n. sp.

Brown; face yellowish, vertex brown in middle; antennae pale brown, annulate with darker, basal joint not very dark; pronotum with mostly black bristles; legs pale yellowish, spines black; abdomen pale at base, black at tip. Wings brown, darker on apical part, heavily marked with pale; costal area pale, a large oblique mark across disc, base of apical cells, middle of first apical, apex of second and third sub-apicals, and a large spot behind cubitus, all pale; also many scattered, often confluent, rounded pale spots. Hind wings pale, dusky at anterior tip. A variety occurs, in both sexes, in which all the area between the median and the cubital veins is pale, and also the apical part behind the anal vein, only a few brown spots in basal part of anal region. In fore wings the discal cell is longer than the pedicel, the first apical not its width on the discal cell, the fourth very narrow at base. The superior appendages of the male are long, sub-clavate, parallel, and wide apart at base, very prominent.

Expanse 20 to 24 mm.

Many specimens from Grand Lake, Newfoundland; also from various parts of New England.

Limnephilus nebulosus Kirby.

Many specimens; also occurs in Europe.

Limnephilus submonilifer Walk.

Four specimens; a common Eastern species.

Limnephilus (Goniotaulius) pulchellus n. sp.

Black; antennae brownish, annulate with black, basal joint dark; pronotum with yellow bristles; femora black, rest of legs yellowish, spines black. Wings hyaline whitish, or soiled luteous, marked with dark brown; a spot on stigma, a mark occupying more than apical half of apical cells (except the first), and containing several rounded, hyaline spots, a large brown spot on subapicals, usually leaving a hyaline space in base of first, and apex of first and second, a long hyaline spot near arculus, region between anal and cubital veins, pale brown; a large spot below radial sector from its base one-third way out on the discal cell, containing a few pale spots, the radial sector, its branches, and the anastomosis heavily dark brown; usually a little brown on discal cell; and a brown triangular spot from radius to discal cell containing two hyaline spots; hind wings hyaline. Discal cell of fore wings not as long as pedicel; first apical not its width on discal. The sub-apical spurs of hind tibiae fully twice their length from the tip.

Expanse 16 mm.

Several from Grand Lake, Newfoundland.

Limnephilus despectus Walk.

Three specimens; also occurs in northern Europe.

Limnephilus ornatus Banks.

Several specimens, quite common in the North.

Halesus sparsus n. sp.

Head rufous, with a few black bristles, an obliquely transverse wart behind each ocellus bearing black bristles; ocelli large, about three times as near eyes as to each other; palpi pale, slender, last joint not as long as distance from eye to eye; antennae brown, annulate with pale, crenulate beneath, basal joint with a black mark above, thorax rufous, a blackish streak on each anterior corner, and mesoscutellum black, a tuft of black bristles near base of each wing. Abdomen brown above, yellowish beneath, legs pale yellowish, with black spines, sub-apical spurs on hind tibiae about one-fifth distance to base, no spines beneath on last joint of hind tarsi. Wings dark

brown, with many rounded hyaline spots, a few of them confluent, about evenly distributed over the wing, except none in the costal area; surface very plainly scabrous; venation brown; only a few blackish hairs on wings; discal cell two and one-half times the length of pedicel, first and fifth apicals their width before anastomosis, radius somewhat sinuous near stigma, the thyridial fork of median vein arises some distance down the cross-vein, lower branch of median not disjointed at anastomosis, anal cell rather short; basal cross-vein at forking of median. Hind wings gray hyaline, venation brownish, discal cell twice as long as pedicel, first apical its width back on discal cell, the fifth but little before anastomosis, the fourth broad, but narrower than second at base.

Expanse 30 mm.

Grand Lake, Newfoundland (Owen Bryant).

Halesus indistinctus Walk.

Three specimens, a rare and interesting species.

Platycentropus maculipennis Kolen.

Several specimens, common in the North.

Apatania stigmatella Zett.

Many specimens, a north European species, previously recorded from the Great Slave Lake district of British America.

SERICOSTOMATIDAE.

Lepidostoma togata Hag.

Four specimens, a common species in the Eastern States.

Alepomyia n. gen.

Basal joints of male antennae moderately long and heavy, longer than length of vertex, wide apart at base, as in *Brachycentrus*; maxillary palpi of male upcurved and appressed to face, densely clothed with broad scale-like hairs; labial palpi dependent, long and slender; venation as figured; in fore wings but four (♂) apical cells, fork three being absent, the discal cell closed in both pairs, the anal vein not running into branch of cubital, but connected back to cubitus a long way before the fork; hind wing with but two apical cells, like *Acrunoecia*. Spurs large and long, 1-4-3 (♂); I can see but one sub-apical on hind tibiae, while the two sub-apicals on middle tibiae are very distinct.

By the distant antennae it is allied to *Brachycentrus* and others of that group,

differs from all in but four apical cells, and in anal running into margin, also in the spur-formula. Similar in many points of venation to *Crunoecia* and *Acrunoecia*, but the distant antennae, spur-formula and anal venation distinguish it from these and allied forms.

Alepomyia bryanti n. sp.

Head brown; vertex with some white hairs; palpi with black hairs on outer side near base, yellowish near tip and above, two very large longitudinal warts on vertex, one each side near eye, and behind each eye is a smaller curved transverse wart, all bearing yellowish hairs; basal joint of antennae yellowish brown, marked with brown, rest of antennae pale, marked with brown in front near base; thorax and abdomen brown; legs pale yellow, with yellowish spurs. Wings brownish, some black hairs along the veins, the stigmal region in both pairs rather heavily marked; venation as figured. The hind tibia are very long and slender, the spurs are large, the sub-apical one scarcely twice its length before tip.

Expanse 14 mm.

Four males from Grand Lake, Newfoundland.

A female that may belong to the species, has the basal joint of antennae very long and slender, five apical cells, the anal vein is connected near its tip to the branch of cubitus, thus forming a small marginal cell, and the spurs are 1-4-4.

HYDROPSYCHIDAE.

Polycentropus maculatus n. sp.

Black, head with gray and some yellow hair; antennae yellowish, faintly marked with brown, palpi pale, legs pale yellowish. Wings brown, stigma blackish, a basally forked hyaline mark on thyridium, the outer cross-veins hyaline, a hyaline spot over arculus, two more spots on posterior margin beyond arculus, a rounded spot in middle of the fourth apical cell, and less distinct one in apex of third apical, and in apex of first subapical cell; venation brown; fork four reaching a little before the cross-vein, fork three not reaching to cross-vein, fork one not as long as pedicel; discal cell about as long as pedicel; hind wings grayish, fork one distinct.

Expanse 15 mm.

One from Grand Lake, Newfoundland.

Hydropsyche slossonæ Banks.

Many specimens, previously known from Franconia, New Hampshire.

Holocentropus flavus n. sp.

Body black, head and thorax with short yellow hair; palpi yellowish brown; antennae pale; legs pale yellowish; abdomen yellow brown. Wings yellowish, clothed with fine short yellow hairs; venation yellowish, stigma brown, a whitish hyaline spot on thyridium, one at end of discal area, and one on the arculus; hind wings yellow gray. In fore wings the discal cell fully as long as pedicel; forks three and four reaching a little before the cross-vein, fork one not as long as the pedicel; in hind wings fork one is absent.

Expanse 16 mm.

One from Grand Lake, Newfoundland.

PERLIDAE.

Isoperla ventralis n. sp.

Head mostly blackish, a yellow spot between ocelli and one each side behind; antennae and palpi brown, pronotum, with broad yellowish median stripe, continued back on the thorax, but indistinct; abdomen brown, apical part of female venter yellowish; legs yellowish brown, femora not darker, setae yellowish. Wings gray hyaline, venation dark brown. Setae nearly as long as the body, joints slender, radial sector usually forked once beyond anastomosis, the fork usually twice as long as pedicel, one cross-vein beyond end of subcosta, about five cross-veins in both median and cubital areas. The antennae are long and very slender. The male abdomen has a yellowish tip above, and beneath on the penultimate segment the middle of the hind margin has a transverse elliptical, produced part of a yellowish color — a very prominent point.

Length 11 mm.

Several specimens from Grand Lake, Newfoundland.

EPHEMERIDAE.

Siphonurus sp.

One specimen.

Heptagenia sp.

Several specimens, but all considerably broken.

EXPLANATION OF PLATE.

- Fig. 1. *Alepomyia bryanti*, genitalia, ♂.
 Fig. 2. *Alepomyia bryanti*, venation.
 Fig. 3. *Holocentropus flavus*, genitalia, ♂.
 Fig. 4. *Limnephilus moestus*, genitalia, ♀.
 Fig. 5. *Limnephilus pulchellus*, genitalia, ♂.
 Fig. 6. *Polycentropus maculatus*, genitalia, ♂.
 Fig. 7. *Isoperla ventralis*, venter, ♀.
 Fig. 8. *Limnephilus moestus*, genitalia, ♂, top.
 Fig. 9. *Limnephilus pulchellus*, genitalia, ♂, top.
 Fig. 10. *Limnephilus moestus*, genitalia, ♂.
 Fig. 11. *Limnephilus moestus*, genitalia, ♂, top.
 Fig. 12. *Halesus sparsus*, genitalia, ♂.
 Fig. 13. *Alepomyia bryanti*, genitalia, ♂, top.
 Fig. 14. *Anabolia quadrinotata*, genitalia, ♂.

THE APHID GENUS FORDA.

BY S. A. ROHWER, BOULDER, COLORADO.

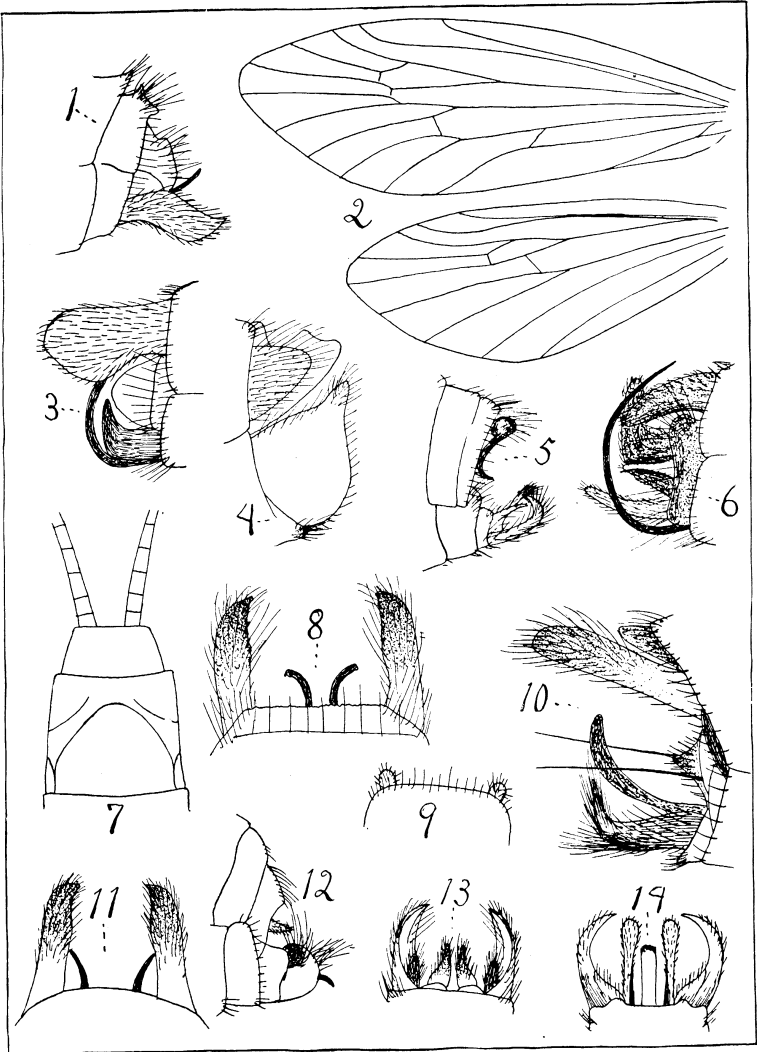
LAST spring Prof. T. D. A. Cockerell sent some aphids of the genus *Forda* and some ants to the U. S. Nat. Mus. The ants were named *Lasius subniger* Emery while the aphids were supposed to be a new species. They were determined by Mr. Pergande. Mr. Pergande did not care to describe the aphids so I undertook to collect some more of them and work them out, however I was not able to find the same species, but found two others that are thought to be new to science and are herein described. There are but five representatives of this genus known from North America. One (*F. kingii* W. P. Ckll.) from Massachusetts, one (*F. occidentalis* Hart.) from Illinois, one (*F. interjecti* W. P. Ckll.) from New Mexico and the two new species from Colorado.

The work is a contribution from the laboratory of Systematic Zoölogy of the University of Colorado. I am greatly indebted to Prof. T. D. A. Cockerell for many suggestions.

The types of the new species have been sent to the U. S. Nat. Mus.

The following table will separate the North American species.

Second and fourth antennal joints not equal, fourth longer; antennal formula 3 (45) 21; color pale green, body covered with fine hair (Ill.) *occidentalis* Hart.



BANKS : INSECTS FROM NEWFOUNDLAND.